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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,327	09/16/2003	Steven Shrader	DENAP002	3788

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EXAMINER

HEIN, GREGORY P

ART UNIT	PAPER NUMBER
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2188

DATE MAILED: 01/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/663,327

Applicant(s)

SHRADER ET AL.

Examiner

Gregory P. Hein

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 12 and 14 - 20 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1 – 3 and 8 – 12 and 16 – 19 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,882,645 (Jones).

As per claim 1, Jones teaches:

A command channel that receives command data and a source id, the source ID indicating a source device that transmitted the command data (Jones Col. 8 lines 33 – 35);

A data-in channel that receives write data and a write source ID, the write source ID indicating a source device that transmitted the write data (Jones Col. 8 lines 36 - 40);
and

A data-out channel that provides read data and a read ID, the read ID indicating a source device that transmitted a read command corresponding to the read data (Jones Col. 8 36 – 40 The communication action specified in the switching directive (Col. 8 lines 33 – 35) can be either a read or a write command.)

As per claim 2, Jones teaches:

The source ID is utilized to associate command data with corresponding write data (Jones Col. 8 lines 36 – 40 The control source horn alerts the source to send the data thereby associating the data with the command.)

As per claim 3, Jones teaches:

Data transmitted to the data-in channel and corresponding command data the write transmitted to the command channel are processed when transmitted during different clock signals (Jones Col. 9 lines 13 – 15 If the data source is not ready to transmit data then the command the corresponding data are transmitted during different clock cycles.)

As per claim 8, Jones teaches:

A command transfer storage that receives command data and a source ID, the source ID indicating a source device that transmitted the command data (Jones Col. 8 lines 33 – 35);

A data-in transfer storage that receives write data and a write source ID, the write source ID indicating a source device that transmitted the write data (Jones Col. 8 lines 36 – 40); and

A data-out transfer storage that provides read data and a read ID, the read ID indicating a source device that transmitted a read command corresponding to the read data (Jones Col. 8 lines 33 – 35.)

As per claim 9, Jones teaches:

The source ID is utilized to associate command data with corresponding write data (Jones Col. 8 lines 36 – 40 The control source horn alerts the source of a data request thereby associating the data with the received data command.)

As per claim 10, Jones teaches:

The write data transmitted to the data-in transfer storage and corresponding command data transmitted to the command transfer storage are processed when transmitted during different clock signals (Jones Col. 9 lines 13 – 15 When the selected data source is not available the control horn can wait such that they are received during different clock cycles. When the source is ready to transmit the data the command and data are processed together.)

As per claim 11, Jones teaches:

Including a separate data-in signal for each source device coupled to the multi-port memory controller (Jones Col. 8 lines 17 – 22.)

As per claim 12, Jones teaches:

Each data-in signal is coupled to the data-in transfer storage (Jones Col. 8 lines 22 - 23)

As per claim 16, Jones teaches:

Receiving command data and a source ID on a command channel during a first clock cycle, the source ID indicating a source device that transmitted the command data (Jones Col. 8 lines 33 - 35);

Receiving write data and a write source ID on a data-in channel during a second clock cycle, the write source ID indicating a source device that transmitted the write data (Jones Col. 8 lines 36 – 40);

Associating the command data with the write data based on the source ID and the write source ID (Jones Col. 8 lines 36 – 40 The source identifier is used to request

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the data from the source thereby associating the data with the command data from which the source ID was derived.); and

Transmitting both the command data and write data to a processing circuit for further processing during a third clock cycle (Jones Col. 8 lines 45 – 49 The data passes through the multi-port device intact via the predetermined route to arrive at the destination address.)

As per claim 17, Jones teaches:

The first clock cycle, second clock cycle, and third clock cycle are each separated by a plurality of clock cycles (Jones Col. 9 line 13 – 19 The device can wait for other commands to process before continuing causing the command data and source data to transmit during different cycles and the device can wait at any point causing arbitrary delays between cycles.)

As per claim 18, Jones teaches:

The operation of providing read data and a read ID on a data-out channel during a fourth clock cycle, the read ID indicating a source device that transmitted a read command corresponding to the read data (Jones Col. 8 lines 33 – 35 The communication action described can be any type of communication including read or write. Jones Col. 9 lines 13 – 19 The device can wait to proceed stalling at any point. Therefore a read may occur during any fourth clock cycle.)

As per claim 19, Jones teaches:

The operation of associating command data with the read data based on a source ID and the read ID (Jones Col. 8 lines 36 – 40 The communication command

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contains either a read address or a write address. The source identifier is used to alert the source to transmit the data thereby associating the command with the data.)

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4 – 7 and 14 – 15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,882,645 (Jones) and further in view of U.S. Patent 4,941,089 (Fischer).

4. As per claim 4,

The command channel further receives length data indicating a size of data corresponding to the command data, wherein the length data can indicate an arbitrary data size.

Jones does not explicitly teach the command channel receiving length data.

Fischer teaches special command bytes indicating the length of the data packets (Fischer Col. 17 lines 57 – 65). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Fischer with Jones since the combined length of the data can be less than the maximum packet size meaning there would

otherwise be wasted byte space (Fischer Col. 17 lines 61 – 65.) Combining this feature with Jones would reduce the wasted space during communications thereby decreasing communication times.

As per claim 5,

The command channel further receives address data indicating an address associated with data corresponding to the command data, wherein the address data can indicate an arbitrary starting location (Jones Col. 8 lines 36 – 40)

As per claim 6,

A port independent data transaction interface as recited in claim 1, wherein the command channel further receives a priority value indicating a priority level of the command data.

Jones does not teach priority values indicating priority of received commands.

Fischer teaches priority values such that the data commands received on the command channel have different priority settings (Fischer Col. 18 lines 56 – 68.) It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Fischer with Jones since expedited data packets require a means for identifying themselves as high priority (Fischer Col. 18 lines 59 – 63.) Combining this feature with Jones allows for immediate processing of instructions with more importance than typical instructions.

As per claim 7,

Command data is processed based on an associated priority value (Fischer Col. 18 lines 64 – 68).

As per claim 14,

The command transfer storage further receives a priority value indicating a priority level of the command data.

Jones does not teach priority values indicating priority of received commands.

Fischer teaches priority values such that the command data have different priority settings (Fischer Col. 18 lines 56 – 68.) It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Fischer with Jones since expedited data packets require a means for identifying themselves as high priority (Fischer Col. 18 lines 59 – 63.)

As per claim 15,

Command data is processed based on an associated priority value (Fischer Col. 18 lines 64 – 68).

As per claim 20,

The operation of receiving a priority value on the command channel during the first clock cycle, wherein command data is processed based on an associated priority value.

Jones does not teach priority values indicating priority of received commands.

Fischer teaches priority values such that the command data have different priority settings (Fischer Col. 18 lines 56 – 68.) It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Fischer with Jones since expedited data packets require a means for identifying themselves as high priority (Fischer Col. 18 lines 59 – 63.)

Allowable Subject Matter

5. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory P. Hein whose telephone number is 571-272-4180. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 571-272-4210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


1/19/06

MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER

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